Xiurui Zhao

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Research Interests

Active Galactic Nuclei in Multi-wavelength, Supermassive Black Holes

Appointments & Fellowships

Center for Astrophysics | Harvard & Smithsonian, Cambridge, U.S. 2021-present
Post-Doctoral Research Fellow, advisor: Dr. Francesca Civano

Center for Astrophysics | Harvard & Smithsonian, Cambridge, U.S. 2020-2021
Pre-Doctoral Fellow, advisor: Dr. Francesca Civano

Education

Clemson University, Clemson, U.S. 2016-2021
Ph.D. in Astrophysics, advisor: Dr. Marco Ajello
Dissertation: *Heavily Obscured Active Galactic Nuclei in NuSTAR Era*

Lanzhou University, Lanzhou, China 2012-2016
B.Sc. in Physics, Cuiying Honors College

Honors and Awards

Clemson University Outstanding Graduate Researcher Award (2 winners each year) 2021
Clemson Science College Outstanding Graduate in Discovery Award 2021
Clemson Physics Department Graduate Research Assistant Award 2021
SAO Predoctoral Fellowship 2020-2021
Clemson Graduate Student Travel Grant 2019, 2021
Cuiying Honors College Abroad Study Fellowship 2014, 2015

Accepted Scientific Proposals

14 accepted X-ray/optical/mm proposals with $240k grant as **PI**:

X-ray

Swift-XRT (ToO, 3 ks) 2022
NuSTAR GI Program (**Large**, 600 ks *NuSTAR* + 195 ks XMM, $150k) 2022
NuSTAR GI Program (100 ks *NuSTAR* + 60 ks XMM, $90k) 2021

Optical

MMT 6.5m Hectospec (0.3 night, 150 sources) 2023A
MMT 6.5m Binospec (0.4+0.1 night) 2023A

SAO FLWO 1.5m FAST (0.2 night)	2023A
SAO FLWO 1.2m Keplercam (1 night)	2023A
MMT 6.5m Hectospec (0.3 night, 135 sources)	2022B
MMT 6.5m Binospec (0.1 night)	2022B
SAO FLWO 1.2m Keplercam (1 night)	2022B
MMT 6.5m Binospec (0.1 DDT night)	2022A
SAO FLWO 1.2m Keplercam (2 nights)	2022A

Sub-mm

Submillimeter Array (SMA) standard science observation (3 tracks)	2022B

Professional Experience

Co-organizers of CfA High Energy Astrophysics Division Seminar	2021-present
Member of *JWST* PEARLS Working Group	2022-present
Member of *HEX-P* Black Hole Growth Working Group	2022-present
Member of *AXIS* AGN/TDA Science Working Group	2022-present
Member of *NuSTAR* Extragalactic Survey Team	2020-present
Member of *Athena* Science Working Group	2020-present
Panelist for *NASA NuSTAR* Proposal Review	2022
Reviewer for CFHT	2022
Reviewer for ApJ, A&A	2020-present

Invited Talks

Yale University, Galaxy Lunch Talk	Apr 2023
MIT, Brown Bag Lunch Talk	Apr 2023
NASA GSFC X-ray Astrophysics Laboratory AGN Seminar (Virtual)	Feb 2023
Center for Astrophysics | Harvard & Smithsonian, High Energy Seminar	Feb 2023
Arizona State University, Cosmology Seminar	Dec 2022
University of Arizona, Steward Observatory / NOIRLab Galaxy group meeting	Dec 2022
MIT, High Energy Astro Group meeitng (Virtual)	Apr 2022
Clemson University, Local Group meeting (Short Term Visiting)	Apr 2022
INAF OAS, Bologna, local group meeting (Short Term Visiting)	Sep 2019

Conferences & Contributed Talks

High Energy Astrophysics Division 20th Meeting (*Contributed Talk*)	Waikōloa, Mar 2023
241st AAS Meeting (*Contributed Talk*)	Seattle, Jan 2023
NuSTAR 2022 Conference (*Contributed Talk*)	Italy, June 2022
New England Regional Quasar and AGN Meeting (*Contributed Talk*)	Storrs, May 2022
High Energy Astrophysics Division 19th Meeting (*Poster*)	Pittsburgh, Mar 2022
Black Hole Across Space and Time (*Contributed Talk*)	Virtual, Dec 2021
238th AAS Meeting (*Dissertation Talk*)	Virtual, June 2021

237th AAS Meeting (*Contributed Talk*)	Virtual, Jan 2021
Supermassive Black Holes Meeting (*Contributed Talk*)	Virtual, Dec 2020
235th AAS Meeting (*Contributed Talk*)	Honolulu, Jan 2020
X-ray Astronomy 2019 Meeting (*Poster*)	Bologna, Italy, Sep 2019
High Energy Astrophysics Division 17th Meeting (*Poster*)	Monterey, Mar 2019
MASC 2019 (*Contributed Talk, Local Organizing Committee*)	Clemson, Mar 2019
233rd AAS Meeting (*Contributed Talk*)	Seattle, Jan 2019

Workshops & Schools

End-to-end Simulations with SIXTE Workshop	Virtual, Mar 2022
2022 Submillimeter Array Interferometery School	Virtual, Jan 2022
Winter School at University of Freiburg	Freiburg, Germany, Feb 2015
Summer School at University of California, Berkeley	Berkeley, Jun-July 2014

Assistant and Mentoring Experience

Co-supervision of Clemson undergraduate students D. Cole and Z. Hu	2019
Research Assistant (advisor: Dr. Marco Ajello), Clemson	2018-2020
Teaching Assistant (PHYS 2230), Clemson	2016-2017

Press Release

Webb Glimpses Field of Extragalactic PEARLS, Studded With Galactic Diamonds	2022

References

- **Prof. Marco Ajello**
  PhD advisor, Clemson University, majello@g.clemson.edu
- **Dr. Francesca Civano**
  Postdoc advisor, NASA Goddard Space Flight Center, francesca.m.civano@nasa.gov
- **Dr. Stefano Marchesi**
  PhD co-advisor, INAF OAS, Bologna, stefano.marchesi@inaf.it

Updated: 01/30/2022

Publication List

- **5 First-author** **ADS**

1. **X. Zhao**, S. Marchesi, M. Ajello, et al. 2019, ApJ, 870, 60
   Compton-thick AGNs in the NuSTAR Era. II. A Deep NuSTAR and XMM-Newton View of the Candidate Compton-thick AGN in NGC 1358
2. **X. Zhao**, S. Marchesi, M. Ajello, 2019, ApJ, 871, 182
   Compton-thick AGN in the NuSTAR Era. IV. A Deep NuSTAR and XMM-Newton View of the Candidate Compton-thick AGN in ESO 116-G018
3. **X. Zhao**, S. Marchesi, M. Ajello, et al. 2020, ApJ, 894, 71
   A broadband X-ray study of a sample of AGNs with [OIII] measured inclinations
4. **X. Zhao**, S. Marchesi, M. Ajello, et al. 2021, A&A, 650, A57
   The properties of the AGN torus as revealed from a set of unbiased NuSTAR observations
5. **X. Zhao**, F. Civano, F. M. Fornasini, et al. 2021, MNRAS, 508, 5176
   The NuSTAR extragalactic surveys of the JWST North Ecliptic pole Time-Domain Field

- **6 Second or third author papers**

1. S. Marchesi, M.Ajello, **X. Zhao**, et al. 2019, ApJ, 872, 8
Compton-thick AGNs in the NuSTAR Era. III. A Systematic Study of the Torus Covering Factor

2. S. Marchesi, M. Ajello, **X. Zhao**, et al. 2019, ApJ, 882, 162
Compton-thick AGNs in the NuSTAR Era. V. Joint NuSTAR and XMM-Newton Spectral Analysis of Three "Soft-gamma" Candidate CT-AGNs in the Swift/BAT 100-month Catalog

3. N. Torres-Albà, S. Marchesi, **X. Zhao**, et al. 2021, ApJ, 922, 252
Compton-Thick AGN in the NuSTAR era VI: Characterization of eight Compton-Thick AGN candidates

4. R. Silver, N. Torres-Albà, **X. Zhao**, et al. 2022, ApJ, 932, 43
Chandra Follow-up Observations of Swift-BAT-selected AGNs II

5. S. Marchesi, **X. Zhao**, N. Torres-Albà, et al. 2022, ApJ, 935, 114
Compton-Thick AGN in the NuSTAR era VIII: A joint NuSTAR-XMM-Newton monitoring of the changing-look Compton-thick AGN NGC 1358

6. R. Silver, N. Torres-Albà, **X. Zhao**, et al. 2022, ApJ, 940, 148
Compton-thick AGN in the NuSTAR Era. IX: A joint NuSTAR and XMM-Newton analysis of four local AGN

- **3 Co-author papers**

1. A. Traina, …, **X. Zhao**, et al. 2021, ApJ, 922, 159
Compton-Thick AGN in the NuSTAR era VII: a joint NuSTAR, Chandra and XMM-Newton analysis of two nearby, heavily obscured sources

2. A. Pizzetti, …, **X. Zhao**, et al. 2022, ApJ, 936, 149
A multi-epoch X-ray study of the nearby Seyfert 2 galaxy NGC 7479: Linking column density variability to the torus geometry

3. R. A. Windhorst, …, **X. Zhao**, et al. 2023, AJ, 165, 13
Webb's PEARLS: Prime Extragalactic Areas for Reionization and Lensing Science: Project Overview and First Results

- **Submitted or to be submitted papers**

1. **X. Zhao**, F. Civano, et al., to be submitted to MNRAS in Feb. 2023
   The NuSTAR and XMM extragalactic surveys of the JWST North Ecliptic pole Time-Domain Field II
2. D. Sengupta, …, **X. Zhao**, et al. Submitted to A&A
   Compton-thick AGN in the NuSTAR Era IX: Analysis of seven local CT-AGN candidates
3. N. Torres-Albà, M. Stefano, **X. Zhao**, et al. Submitted to A&A
   Hydrogen Column Density Variability in a sample of local Compton-thin AGN
4. I. Cox, …, **X. Zhao**, et al. Submitted to A&A
   A simple method to predict N_H variability in active galactic nuclei
5. R. Silver, N. Torres-Albà, **X. Zhao**, et al. Submitted to A&A
   A New Mid-Infrared and X-ray Machine Learning Algorithm to Discover Compton-thick AGN